

IN THE CLAIMS

The following list of claims replaces all earlier versions of the claims.

1. (Currently Amended) A method for automatically selecting and assigning non-overlapping private IP addresses comprising ~~the steps of:~~

setting an internal address space to a default private IP address space;

receiving a provider private IP address and range;

determining if the default private IP address space overlaps with the provider private IP address and range; and

selecting a largest available non-overlapping private IP address space if
the default private IP address space overlaps with the provider private IP address and range, ~~selecting a largest available non-overlapping private IP address space.~~

2. (Currently Amended) The method of claim 1 further comprising:

~~the step of~~ requesting the provider private IP address and range.

3. (Currently Amended) The method of claim 1 wherein ~~the step of~~ the selecting further comprises iterating through each available private IP address space to find the largest available non-overlapping private IP address space.

4. (Currently Amended) The method of claim 1 further comprising:

~~the step of selecting from the default IP address space a private IP~~
address and assigning the selected private IP address to a network device if the
default private IP address space does not overlap with the provider private IP
address and range.

5. (Currently Amended) The method of claim 1 further comprising:

~~the step of selecting a private IP address from the largest available non-~~
overlapping private IP address space and assigning the selected private IP
address to a network device if the default private IP address space overlaps with
the provider private IP address and range.

6. (Original) A system for automatically selecting and assigning non-
overlapping private IP addresses comprising:

means for setting an internal address space to a default private IP address
space;

means for receiving a provider private IP address space;

means for determining if the default private IP address space overlaps
with the provider private IP address space; and

means for selecting a largest available non-overlapping private IP address
space if the default private IP address space overlaps with the provider private
IP address space.

7. (Original) The system of claim 6 further comprising means for iterating through available private IP address space to find the largest available non-overlapping private IP address space if the default private IP address space overlaps with the provider private IP address space.
8. (Original) The system of claim 6 further comprising means for selecting from the default IP address space a private IP address, and assigning the selected private IP address to a network device if the default private IP address space does not overlap with the provider private IP address space.
9. (Original) The system of claim 6 further comprising means for selecting a private IP address from the largest available non-overlapping private IP address space and assigning the selected private IP address to a network device if the default private IP address space overlaps with the provider private IP address space.
10. (Currently Amended) A machine readable medium having embodied thereon a program being executable by a machine to perform ~~method steps~~operations for selecting and assigning non-overlapping private IP addresses, the operations~~method steps~~ comprising:
- setting an internal address space to a default private IP address space;
 - receiving a provider private IP address space;

determining if the default private IP address space overlaps with the provider private IP address space; and

if the default private IP address space overlaps with the provider private IP address space, then selecting a largest available non-overlapping private IP address space.

11. (Currently Amended) The machine readable medium of claim 10 further comprising the ~~method step~~operation of iterating through available private IP address space to find the largest available non-overlapping private IP address space if the default private IP address space overlaps with the provider private IP address space.

12. (Currently Amended) The machine readable medium of claim 10 further comprising the ~~method steps~~operations of selecting from the default IP address space a private IP address and assigning the selected private IP address to a network device if the default private IP address space does not overlap with the provider private IP address space.

13. (Currently Amended) The machine readable medium of claim 10 further comprising the ~~method steps~~operations of selecting a private IP address from the largest available non-overlapping private IP address space and assigning the

selected private IP address to a network device if the default private IP address space overlaps with the provider private IP address space.

14. (Original) An apparatus capable of automatically selecting and assigning non-overlapping private IP addresses to devices within a local network, comprising:

an IP module, the IP module setting an internal address space to a default address space;

a client module coupled to the IP module for determining a private IP address assigned to a gateway device; and

a server module coupled to the IP module for automatically assigning a non-overlapping private IP address to a network device.

15. (Original) The apparatus of claim 14 wherein the client module is a Dynamic Host Configuration Protocol client.

16. (Original) The apparatus of claim 14 wherein the client module is a Point-to-Point Protocol client.

17. (Original) The apparatus of claim 14 wherein the server module is a Dynamic Host Configuration Protocol server.

18. (Original) The apparatus of claim 14 wherein the IP module determines if the default private IP address space overlaps with the private IP address assigned to the gateway device.

19. (Original) The apparatus of claim 18 wherein the IP module iterates through available private IP address space to find a largest available non-overlapping private IP address space if the default private IP address space overlaps with the private IP address assigned to the gateway device.

20. (New) The apparatus of claim 18 wherein the apparatus is the gateway device.

21. (New) The apparatus of claim 18 wherein the apparatus is server of an Internet Service Provider.